

AMENDMENT

U.S. Appln. No. 10/803,979

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

Claim 1. (Currently Amended) A process for the production of a coating composition which comprises the steps of:

- (a) oxidising a mixture which comprises at least one plant protein and starch, in water at an alkaline pH; and
- (b) heating the mixture concomitantly with oxidation or subsequent to oxidation to provide a composition with a viscosity from 1 to 100 ~~centapoise~~centipoises, and a pH from pH 7.5 to pH 9.

Claim 2. (Currently Amended) A process of claim 1, wherein the mixture has a solids content from 3% to 50%.

Claim 3. (Currently Amended) A process of claim 1, wherein the heating is performed at from 70°C to 150°C.

Claim 4. (Currently Amended) A process for the production of a coating composition which comprises the steps of forming a mixture of a plant protein and plant starch in water at a solids content from 3% to 50%, oxidising the mixture with an oxidising agent at alkaline pH and heating the oxidised mixture at a temperature from 70°C to 150°C until the viscosity is lowered to 1 to 100 ~~centapoise~~centipoises.

Claim 5. (Currently Amended) A process of claim 1, wherein the alkaline pH of step (a) is from 8 to 13.

Claim 6. (Currently Amended) A process of claim 5, wherein the alkaline pH of step (a) is from 9 to 12.

AMENDMENT

U.S. Appln. No. 10/803,979

Claim 7. (Currently Amended) The process of claim 1, wherein said protein is a plant protein selected from the group consisting of wheat, rye, triticale, maize, oats, and barley protein.

Claim 8. (Currently Amended) The process of claim 1, wherein said protein is a mixture of two or more different plant proteins selected from the group consisting of wheat, rye, triticale, maize, oats, and barley proteins.

Claim 9. (Currently Amended) The process of claim 1, wherein said starch is a plant starch selected from the group consisting of wheat, rye, sorghum, triticale, maize, oats, barley, tapioca, potato, sago and rice starch.

Claim 10. (Currently Amended) The process of claim 1, wherein said starch is selected from waxy starch and high amylose starch.

Claim 11. (Currently Amended) The process of claim 1, wherein said starch and protein mixture comprises from 4% w/w to 50% w/w plant protein.

Claim 12. (Currently Amended) The process of claim 1, wherein said starch/protein mixture is selected from the group consisting of flour, meal, grits and milled or crushed cereal grains.

Claim 13. (Currently Amended) The process of claim 12, wherein the mixture is a flour is selected from the group consisting of wheat flour, rye flour, triticale flour, maize flour, oat flour and barley flour.

Claim 14. (Currently Amended) The process of claim 13, wherein said flour has a protein content between 2% and 20%.

AMENDMENT

U.S. Appln. No. 10/803,979

Claim 15. (Currently Amended) The process of claim ~~1~~13, wherein an additional plant protein is added to the flour to increase protein level.

Claim 16. (Currently Amended) The process of claim 15, wherein said additional plant protein is from the same grain from which the flour was produced, ~~or is a plant protein from another plant species.~~

Claim 17. (Currently Amended) The process of claim 1, wherein the starch and protein mixture comprises a solids content from 3% w/w to 50% w/w.

Claim 18. (Currently Amended) The process of claim 1, wherein said oxidation is conducted at a temperature from 25°C to 50°C for 5 to 30 minutes prior to subsequent heating for 5 to 150 minutes at a temperature of 50°C to 150°C until viscosity of the composition is from 1 to 100 ~~centapoise~~ centipoises.

Claim 19. (Currently Amended) The process of claim 1, wherein said composition is dried in a dryer to a flowable particulate state.

Claim 20. (Currently Amended) The process of claim 1, wherein the oxidation and heating are conducted at the same time.

Claim 21. (Previously Presented) A composition for coating paper obtainable by a process as defined in claim 1.

Claim 22. (Original) A process for coating paper comprising the step of applying a composition as defined in claim 21 to paper.

AMENDMENT

U.S. Appln. No. 10/803,979

Claim 23. (Previously Presented) A process for coating paper which comprises the steps:

- (a) preparing a composition for coating by a process as defined in claim 1; and
- (b) applying the composition to paper.

Claim 24. (Original) A product obtainable by the process defined in claim 23.

Claim 25. (Currently Amended) A paper coated with an aqueous coating composition which comprises an alkali oxidised gelatinised starch/protein mixture, said composition having a viscosity from 1 to 100 ~~centapoise~~ centipoises, and a pH between pH 7.5 and pH 9.

Claim 26. (Currently Amended) An aqueous composition for coating paper or paper board which comprises an alkali oxidised gelatinised starch and protein mixture, said composition having a viscosity from 1 to 100 ~~centapoise~~ centipoises (cps), and a pH from pH 7.5 to pH 9.

Claim 27. (Currently Amended) A composition of claim 26, wherein the viscosity is from 5 to 80 ~~centapoise~~ centipoises.

Claim 28. (Currently Amended) A composition of claim 27, wherein the viscosity is from 5 to 60 ~~centapoise~~ centipoises.

Claim 29. (Currently Amended) A composition of claim 26, wherein the pH is from pH 7.8 to pH 8.8.

Claim 30. (Currently Amended) The composition of claim 26, wherein said protein is a plant protein selected from the group consisting of wheat, rye, triticale, maize, oats, and barley protein.

Claim 31. (Currently Amended) The composition of claim 26, wherein the protein is a mixture of two or more different plant

AMENDMENT

U.S. Appln. No. 10/803,979

proteins selected from the group consisting of wheat, rye, triticale, maize, oats, and barley protein.

Claim 32. (Currently Amended) The composition of claim 26, wherein said starch comprises a plant starch.

Claim 33. (Currently Amended) The composition of claim 26, wherein said starch is a plant starch selected from the group consisting of wheat, rye, sorghum, triticale, maize, oats, barley, tapioca, potato, sago and rice starch.

Claim 34. (Currently Amended) The composition of claim 26, wherein said starch is selected from waxy starch and high amylose starch.

Claim 35. (Currently Amended) The composition of claim 26, wherein said gelatinised starch and protein mixture comprises from 6% w/w to 50% w/w plant protein.

Claim 36. (Currently Amended) A composition of claim 35, wherein said gelatinised starch and protein mixture comprises from 8% w/w to 25% w/w.

Claim 37. (Currently Amended) The composition of claim 26, wherein said starch and protein mixture is selected from the group consisting of flour, meal, grits and milled or crushed cereal grains.

Claim 38. (Currently Amended) The composition of claim 37, wherein said cereal grains are selected from the group consisting of wheat, rye, triticale, maize, oat and barley grains.

Claim 39. (Currently Amended) The composition of claim 37, wherein said flour has a protein content between 2% and 20% w/w.

AMENDMENT

U.S. Appln. No. 10/803,979

Claim 40. (Currently Amended) The composition of claim 37, wherein an additional plant protein is added to the flour to increase protein level.

Claim 41. (Currently Amended) The composition of claim 40, wherein said additional plant protein is from the same grain from which the flour was produced, ~~or is a plant protein from another plant species.~~

Claim 42. (Currently Amended) The composition of claim 26, wherein said alkali oxidised aqueous gelatinised starch/protein mixture comprises a solids content of from 3% w/w to 50% w/w.

Claim 43. (Currently Amended) The composition of claim 26, wherein said alkali oxidised aqueous gelatinised starch/protein mixture is obtained by oxidising a plant starch and plant protein mixture with an oxidising agent under alkaline conditions and heating the oxidised mixture at a temperature from 70°C to 150°C until the viscosity is from 1 to 100 ~~centipoises~~ centipoises.

Claim 44. (Currently Amended) The composition of claim 43, wherein oxidation is conducted at a temperature of 25°C to 50°C for 5 to 30 minutes prior to heating for 5 to 150 minutes at a temperature of 50°C to 150°C until viscosity of the composition is from 1 to 100 ~~centipoises~~ centipoises.

Claim 45. (Currently Amended) The composition of claim 43, wherein oxidation is carried out under conditions of heating for a period of 5 to 150 minutes at a temperature of 50°C to 150°C until viscosity of the composition is from 1 to 100 ~~centipoises~~ centipoises.

Claim 46. (Currently Amended) The composition of claim 43, wherein oxidation and heating are conducted at the same time.

AMENDMENT

U.S. Appln. No. 10/803,979

Claim 47. (Previously Presented) The composition of claim 26 which is dried in a dryer to a flowable particulate state.

Claim 48. (Currently Amended) An aqueous coating composition which comprises a mixture of starch and plant protein in water having a solids content of 3% w/w to 30% w/w, a protein content of 4% w/w to 50% w/w, a viscosity of 1 to 100 ~~centapoise~~ centipoises, and a pH from pH 7.5 to pH 9, wherein the starch is gelatinised and both the starch and protein in the mixture are alkali oxidised at a pH from pH 8 to pH 13.

Claim 49. (Previously Presented) A process for coating paper which comprises the step of applying a composition as defined in claim 26 to paper, paperboard or cardboard.

Claim 50. (Original) A product obtainable by the process of claim 49.

Claim 51. (Original) A fibreboard comprising an alkali oxidised and gelatinised starch/protein mixture incorporated within a fibreboard.

Claim 52. (Original) The fibreboard according to claim 51, wherein said fibreboard is selected from the group consisting of plasterboard, composite board, and particleboard.

Claim 53. (Original) A process for the production of fibreboard, which comprises forming a mixture of plant protein and plant starch in water, preferably having from 3-50% solids content, oxidising the mixture with an oxidising agent at alkali pH at 25°C to 50°C for 5-30 minutes or up to 24-48 hours, mixing the alkali oxidised mixture with the fibreboard constituents, followed by heating the resultant mixture which may be formed

AMENDMENT

U.S. Appln. No. 10/803,979

into sheets in an oven at a temperature of 50°C to 150°C for 20 to 150 minutes.

Claim 54. (Currently Amended) The process of claim 48, wherein said fibreboard constituents are selected from the group consisting of gypsum, wood particles, and fibrous constituents.

Claim 55. (New) The process of claim 15, wherein said additional plant protein is from a different plant species from which the flour is produced.

Claim 56. (New) The composition of claim 40, wherein said additional plant protein is from a different plant species from which the flour is produced.